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10/604,778

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DATE: Monday, August 09, 2004

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☐	L1	polyazido	17
☐	L2	l1 and carboxylic acid esters	0
☐	L3	esters	827137
☐	L4	carboxylic acid	382582
☐	L5	L1 and l3 and l4	1

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Search Results - Record(s) 1 through 10 of 17 returned.

☑ 1. Document ID: US 5442080 A Relevance Rank: 99

Using default format because multiple data bases are involved.

L1: Entry 2 of 17 File: USPT Aug 15, 1995

US-PAT-NO: 5442080

DOCUMENT-IDENTIFIER: US 5442080 A

TITLE: Process for preparing polyazido alcohols and polyamino alcohols and application to the preparation of polyazidothiols as derivatives thereof

DATE-ISSUED: August 15, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Caubere; Paul	Nancy			FR
Forconi; Herve	Longjumeau			FR

US-CL-CURRENT: 552/8; 552/10

Full | Title | Citation | Front | Review | Classification | Date | Reference | [illegible] | [illegible] | Claims | KWMC | Draw De

☐ 2. Document ID: US 4604248 A Relevance Rank: 93

L1: Entry 5 of 17 File: USPT Aug 5, 1986

DOCUMENT-IDENTIFIER: US 4604248 A

**** See image for Certificate of Correction ****

TITLE: Chemical case bond system with azido compound bonding

Brief Summary Text (6):

Generally, this invention may be characterized as a method of bonding a solid propellant to the inner surface of a cured elastomeric insulator carried by a rocket motor chamber, the solid propellant being solidified by crosslinking propellant ingredients of the solid propellant with a polyfunctional propellant crosslinker dispersed throughout the ingredients, the method comprising: (a) applying a thin film to said inner surface, the film comprising an azido composition selected from the group consisting of (i) a polyfunctional azido compound or polymer that additionally has crosslinker reactive functionality that is reactive with the polyfunctional propellant crosslinker, (ii) a polyazido

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compound or polymer and a polyfunctional graftable compound or polymer having (a) functionality that is reactive with azido functionality of the polyazido compound or polymer as well as (b) crosslinker reactive functionality that is reactive with the polyfunctional propellant crosslinker and (iii) a combination of (i) and (ii); (b) exposing the film to sufficient energy in the form of heat or light or a combination thereof to cause azido functionality of the azido compositions to react with the insulator and graft the crosslinker reactive functionality to the elastomeric insulator; (c) placing uncured propellant that contains the propellant crosslinker and solidifies into the solid propellant upon curing thereof in contact with the grafted surface; (d) curing the propellant such that the propellant crosslinker reacts with the functionality that is reactive therewith and bonded to the insulator inner surface thereby bonding the insulator polymer to the solid propellant binder polymer.

Brief Summary Text (30):
Polyazidoformates (especially diazidoformates) are preferred azido compounds for use in this invention. Exemplary polyazidoformates appear in U.S. Pat. No. 3,284,421 (Breslow) which is herein hereby incorporated by reference for its disclosure of polyazidoformates. See, also, U.S. Pat. No. 3,859,261 (Breslow) and U.S. Pat. No. 3,754,973 (Spurlin) in connection with polyazido compounds with other functionality. Polyazidoformates especially suitable for promoting the graft of appropriate polyols to insulator polymers include diazidoformates of diols having the structure HO(--CH.sub.2 --) .sub.n OH where n varies from 4 to about 15, the mixed diols from the hydroxymethylation of benzene, toluene, napthalene and substituted naphthalenes as well as the diazidoformate of 1,4-bis(2-hydroxyethoxy) benzene. Also useful are the triazidoformates derived from triols such as 1,1,1-tris-(hydroxymethyl)ethane, 1,1,1-tris(hydroxymethyl)propane and tris-(hydroxymethyl)nitromethane. However, these latter compounds may be expected to be shock sensitive because of the high azide concentration and should therefore be used with caution.

CLAIMS:

1. A method of bonding a solid propellant to the inner surface of an elastomeric insulator carried by a rocket motor chamber, said solid propellant being solidified by crosslinking propellant ingredients of said solid propellant with a polyfunctional propellant crosslinker dispersed throughout said ingredients, said method comprising

(a) applying a thin film to said inner surface, said film comprising an azido composition selected from the group consisting of (i) a polyfunctional azido compound or polymer that additionally has crosslinker reactive functionality that is reactive with said polyfunctional propellant crosslinker, (ii) a polyazido compound or polymer and a polyfunctional graftable compound or polymer having (a) functionality that is reactive with azido functionality of said polyazido compound or polymer as well as (b) crosslinker reactive functionality that is reactive with said polyfunctional propellant crosslinker and (iii) a combination of (i) and (ii);

(b) exposing said film to sufficient energy in the form of heat or light or a combination thereof to cause azido functionality of said azido compositions to react with said insulator and graft said crosslinker reactive functionality to the surface of said elastomeric insulator;

(c) placing uncured propellant that contains said propellant crosslinker and solidifies into said solid propellant upon curing thereof in contact with said grafted surface applied in (b);

(d) curing said propellant such that said propellant crosslinker reacts with said functionability that is reactive therewith and bonded to said insulator surface

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thereby bonding said insulator to said solid propellant binder polymer.

6. The method in accordance with claim 1, wherein said polyazido compound or polymer is selected from azidoformates and sulfonylazides.

10. A method of bonding a solid propellant to the inner surface of an elastomeric insulator carried by a rocket motor chamber wherein said solid propellant is solidified by crosslinking propellant ingredients of said solid propellant crosslinker mixed with said ingredients, said method comprising:

(a) applying a film to said inner surface, said film comprising a polyazido compound or polymer and a polyfunctional graftable compound or polymer having functionality that is reactive with azido functionality of said polyazido compound and said polyfunctional propellant crosslinker;

(b) exposing said film to sufficient electromagnetic energy in the form of heat or light or both to cause azido functionality of said polyazido compound or polymer to react with said insulator surface and said polyfunctional graftable compound or polymer;

(c) placing uncured propellant that contains said propellant crosslinker and solidifies into said solid propellant upon curing thereof in contact with said film applied in (b);

(d) curing said propellant such that said propellant crosslinker reacts with said crosslinker reactive functionality of said polyfunctional graftable compound or polymer thereby bonding said insulator or polymer to said solid propellant binder polymer.

11. The method in accordance with claim 10, wherein said polyazido compound comprises a diazidoformate.

17. The method in accordance with claim 15, wherein said polyazido compound is selected from sulfonylazides and polyazidoformates.

☐ 3. Document ID: US 4683085 A Relevance Rank: 90

L1: Entry 4 of 17 File: USPT Jul 28, 1987

DOCUMENT-IDENTIFIER: US 4683085 A
TITLE: Polyazido esters

Brief Summary Text (3):
This invention relates to production of new azido compounds, and is particularly directed to the preparation of polyazido esters derived from pentaerythritol polyazides, together with a method for producing such compounds.

Brief Summary Text (13):
Another object of the present invention is to provide energetic azido compounds in

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the form of polyazido esters.

Brief Summary Text (22):
It will be noted that the above compounds (1) (2) and (3) of the invention have a multiplicity of azido groups, or a multiplicity of azido and nitro groups, and such polyazido and polyzaido/polynitro substituted esters are highly effective as energetic plasticizers, which particularly function to increase the burn rate of minimum smoke solid propellants.

CLAIMS:

1. A polyazido monoester having the general formula: ##STR4## wherein X is N.sub.3 or ONO.sub.2.

2. A polyazido triester having the formula: ##STR5##

☐ 4. Document ID: CA 2083465 A, FR 2684102 A1, US 5442080 A Relevance Rank: 89

L1: Entry 12 of 17 File: DWPI May 22, 1993

DERWENT-ACC-NO: 1993-250173
DERWENT-WEEK: 199332

TITLE: Poly:azido-alcohol prepn. in high yield - by reaction of poly-substituted oxirane and metal azide in aq. medium, used as e.g. intermediate for poly:aminoalcohol

INVENTOR: CAUBERE, P; FORCONI, H

PRIORITY-DATA: 1991FR-0014541 (November 21, 1991)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CA 2083465 A	May 22, 1993	F	017	C07C247/02
FR 2684102 A1	May 28, 1993		017	C07C247/04
US 5442080 A	August 15, 1995		007	C07F009/28

INT-CL (IPC): C06B 43/00; C06D 5/00; C07C 213/02; C07C 215/18; C07C 215/28; C07C 233/32; C07C 247/02; C07C 247/04; C07C 319/08; C07C 323/25; C07C 323/48; C07D 233/32; C07F 9/28

☐ 5. Document ID: JP 10115914 A Relevance Rank: 88

L1: Entry 9 of 17 File: JPAB May 6, 1998

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PUB-NO: JP410115914A
DOCUMENT-IDENTIFIER: JP 10115914 A
TITLE: PHOTOSENSITIVE COMPOSITION, AND PHOTOSENSITIVE ELEMENT CONTAING THE SAME, AND NEGATIVE IMAGE FORMING METHOD

☐ 6. Document ID: US 4455364 A Relevance Rank: 88

L1: Entry 6 of 17 File: USPT Jun 19, 1984

DOCUMENT-IDENTIFIER: US 4455364 A
TITLE: Process for forming metallic image, composite material for the same

Brief Summary Text (42):
As the light-sensitive resins in which azido groups are incorporated into their molecules in the previous paragraph (4), there can be mentioned, for example, polyazido vinyl benzoate, polyazido vinyl phthalate, polyazido styrene, polyvinylazidobenzalacetal, polyvinylazidonaphthylacetal, azidobenzaldehyde phenolic resin, azidophenylamine formalin condensation polymer, azidopolymers of polyvinylalcohol, azidopolymers of cellulose such as azidophthalate of partially hydrolyzed cellulose acetate and azidopolymers such as gelatin and casein.

☐ 7. Document ID: US 4683086 A Relevance Rank: 88

L1: Entry 3 of 17 File: USPT Jul 28, 1987

DOCUMENT-IDENTIFIER: US 4683086 A
TITLE: Azido derivatives of pentaerythritol

Brief Summary Text (7):
In U.S. application Ser. No. 766,459, filed Aug. 19, 1985, titled Polyazido Esters, by the same inventors as the present application and assigned to the same assignee as the present application, there is disclosed and claimed polyazido esters prepared from diazido and triazido derivatives of pentaerythritol. These derivatives include pentaerythritol triazide and pentaerythritol diazido mononitrate.

Detailed Description Text (17):
The pentaerythritol triazido mononitrate and the pentaerythritol diazido dinitrate can have utility per se as energetic plasticizers, while the alcohols pentaerythritol triazide and pentaerythritol diazido mononitrate have utility as precursors for the preparation of energetic esters, as disclosed and claimed in above copending application Ser. No. 766,459. Thus, as disclosed in such application, both of such alcohols react readily with 4,4,4-trinitrobutyryl chloride to form the polyazido/polynitro substituted esters tris (2,2,2-

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azidomethyl) ethyl and 3-nitrato-2,2-bis(azidomethyl) propyl 4,4,4-trinitrobutyrates, respectively. The reaction for producing the first mentioned ester is set forth below:

☐ 8. Document ID: US 3526644 A Relevance Rank: 88

L1: Entry 16 of 17 File: USOC Sep 1, 1970

US-PAT-NO: 3526644
DOCUMENT-IDENTIFIER: US 3526644 A

TITLE: POLYAZIDOFORMAMIDES

DATE-ISSUED: September 1, 1970

INVENTOR-NAME: SUZUKI SHIGETO

US-CL-CURRENT: 552/6; 521/143, 521/94, 521/95

☐ 9. Document ID: US 3547843 A Relevance Rank: 88

L1: Entry 15 of 17 File: USOC Dec 15, 1970

US-PAT-NO: 3547843
DOCUMENT-IDENTIFIER: US 3547843 A

TITLE: FOAMED POLYOLEFIN COMPOSITIONS USING POLYAZIDOFORMAMIDES

DATE-ISSUED: December 15, 1970

INVENTOR-NAME: SUZUKI SHIGETO

US-CL-CURRENT: 521/95; 521/143, 521/145, 521/146, 525/376, 552/6

☐ 10. Document ID: US 4683085 A Relevance Rank: 88

L1: Entry 13 of 17 File: DWPI Jul 28, 1987

DERWENT-ACC-NO: 1987-228349
DERWENT-WEEK: 198732

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TITLE: Pentaerythritol di: and tri:azido ester(s) of tri:nitro:butyric acid - useful as energetic plasticisers

INVENTOR: FRANKEL, M B; WILSON, E R

PRIORITY-DATA: 1985US-0766459 (August 19, 1985)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 4683085 A	July 28, 1987		003	

INT-CL (IPC): C07C 117/00

Terms	Documents
polyazido	17

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